PSYC3013 – Perceptual Systems

Unit of Study Code: PSYC3013

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Format of Unit: 2 x 1 hour lectures/week x 13 weeks
1 x 2 hour tutorial/week x 10 weeks

Credit Point Value: 6 Credit Points

Prerequisite:
Intermediate Year Psychology units including
PSYC (2011 or 2111) and at least one other Intermediate Psychology Unit from
PSYC (2012 or 2112), PSYC (2013 or 2113), PSYC (2014 or 2114).

Assessment: Class work:
Class Report, 2000-2700 words (20% of the total mark of the unit)
Due Week 6 Friday 31 August

Group presentation (10% of the total mark of the unit)
Done Week 11, during tutorial 8-11 October

Tutorial Quiz (20%)
Done Week 13, during tutorial 22–25 October

Examination:
50%: Multiple choice questions, 50% short answers of up to 1 page each
Unit of study general description:

The unit covers at an advanced level selected topics in perception from the psychophysical, physiological and neuropsychological perspectives. Students are expected to gain an understanding of some of the major theoretical issues motivating current perceptual research, to appreciate the significance of basic perceptual research for understanding normal perceptual functioning, and to be able to evaluate the empirical and conceptual worth of research contributions.

Teaching outcomes:

- Knowledge of the structural and functional properties of perceptual modalities with emphasis on vision, audition and somatic senses
- Appreciation of the basic processing principles common to various perceptual modalities (optimization, plasticity, redundancy, interactions, etc)
- Understanding of the processes by which combined input from various senses contribute to normal perceptual experience and action
- Understanding of the major theoretical approaches to perception and current issues guiding research
- Basic knowledge of the methods and measures commonly used in perception research
- Ability to understand and evaluate empirical studies in perception

Evidence of learning:

Assessment of work completed in tutorials will take the form a quiz. Group class presentation and the 1500 words report will assess understanding of the topics of selected readings and the ability to design and critically evaluate research. At the end of semester, an examination (short answer and multiple choice) will assess knowledge of the entire course including tutorial work, lecture material, recommended reading and all the stated teaching outcomes.

Lecture Program

Alex Holcombe (Lectures 1-12):

- Filling in blindspots
- Spatial resolution of vision and attention
- Touch & proprioception, perceptual disorders
- Temporal resolution of vision and attention
- Object-based visual processing
- Multiple object tracking
- Noticing visual events
- Perception and action
- Perception on the pitch
David Alais (Lectures 13-17):
- Combining audition and vision: neural structures & functions
- Audiovisual perceptual interactions
- Dealing with audiovisual discrepancy
- Auditory localisation and Virtual Auditory Space
- Perceptual ambiguity

Colin Clifford (Lectures 18-22):
- Visual cortex: structure & function
- Modularity & binding
- Computational approaches to vision
- Motion processing
- Colour and lightness

John Cass (Lectures 23-25):
- Temporal processing - Channels and decorrelation
- Spatial context - segregation, integration and crowding

NOTE: some changes in lecture program are likely, for notice see webpage at WebCT

Tutorial Program:
Tutorials are a mixture of class demonstrations and discussions and self-directed computer-based tutorials followed by discussion.

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture dates</th>
<th>Tutorials</th>
<th>Lectures</th>
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<tbody>
<tr>
<td>1.</td>
<td>23, 25 July</td>
<td>No tutorials</td>
<td>Holcombe</td>
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<td>2.</td>
<td>30 July, 1 Aug</td>
<td>Touch – tactile acuity, rubber hand</td>
<td>Holcombe</td>
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<td>3.</td>
<td>6, 8 Aug</td>
<td>Blindspot and filling in</td>
<td>Holcombe</td>
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<td>4.</td>
<td>13, 15 Aug</td>
<td>Plan blindspot experiments</td>
<td>Holcombe</td>
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<td>5.</td>
<td>20, 22 Aug</td>
<td>No tutorials, prepare reports</td>
<td>Holcombe</td>
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<td>6.</td>
<td>27, 29 Aug</td>
<td>Signal Detection Theory</td>
<td>Holcombe</td>
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<td>7.</td>
<td>3, 5 Sep</td>
<td>Proprioception - arm vibration</td>
<td>Clifford</td>
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<td>8.</td>
<td>10, 12 Sep</td>
<td>Motion perception I</td>
<td>Clifford</td>
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<td>9.</td>
<td>17, 19 Sep</td>
<td>Motion perception II</td>
<td>Clifford, then Alais</td>
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<td>10.</td>
<td>3 Oct</td>
<td>No tutorials (prepare presentations)</td>
<td>Alais</td>
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<td>11.</td>
<td>8, 10 Oct</td>
<td>Perceptual disorders (presentations)</td>
<td>Alais</td>
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<td>12.</td>
<td>15, 17 Oct</td>
<td>Audition</td>
<td>Alais, then Cass</td>
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<td>13.</td>
<td>22, 24 Oct</td>
<td>Tutorial Quiz</td>
<td>Cass</td>
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   (see also: http://www psy.vanderbilt.edu/faculty/blake/214_F2005/BlakeSekuler.html)
2. Journal articles and chapters from selected books (to be announced in lectures).

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